

ARCO Alaska, Inc.

Post Office Box 100360
Anchorage, Alaska 99510
Telephone 907 276 1215



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April 16, 1985

RECEIVED

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AIR PROGRAMS
BRANCH

Mr. Ray Nye
U.S. Environmental Protection
Agency, Region X
1200 Sixth Avenue
Seattle, WA 98101

Dear Mr. Nye:

RE: Source Testing Requirements for North Slope, Alaska Oil and Gas Facilities

As we discussed in our recent telephone conversation, the Prudhoe Bay Unit and the Kuparuk River Unit have been conducting source testing of various facilities on the North Slope, Alaska, in fulfillment of the conditions to the Prevention of Significant Deterioration (PSD) permits granted by EPA over the years. We have been scheduling the source tests to measure the emissions of all the types of sources that are present on the North Slope, rather than measuring each source at each facility. We believe that this is an approach that has been satisfactory to your agency in the past, and still is a very cost-effective, efficient method for satisfying the source test requirements in our permits.

I have enclosed Table 1 that lists all of the sources that have been tested so far on the North Slope. I want to call your attention to the Ruston TB-5000 turbines tested in 1983 and the GE Frame 5 (35 MHP) turbine tested in 1984. These machines are used for the same purposes and the same loads as those 5 MHP and 35 MHP turbines at Flow Station 2. It has been our understanding that whenever this kind of correspondence occurs, further testing of the same type of equipment is not needed. We have been planning our source testing programs on this basis.

I have also included Table 2 which lists the Air Test Schedule as is forecast to date. This schedule lists the equipment location, size, and test year, for your reference and information.

Also included are copies of the analyses of the natural gas used as fuel in the Kuparuk River Oilfield and the Prudhoe Bay Oilfield for your reference. The composition of the gas shows only slight variation between oilfields reflecting substantial similarity. We believe that this similarity in fuel composition further supports single tests for the same type of equipment, regardless of location.

USEPA REG



0000216

Please contact me if you do not agree with the planning assumptions laid out in this correspondence or if I can clarify any questions you may have.

Sincerely,

G. Scott Ronzio
G. Scott Ronzio
Sr. Environmental Coordinator

GSR:jms

cc: Kathy Pazera
U.S. Environmental Protection Agency, Region X
Alaska Operations Office
3200 Hospital Drive
Suite 201
Juneau, AK 99801

J. Ives, ARCO
P. Metz, ARCO
T. Fink, ARCO
File: Prudhoe Bay - 100 - Source Testing

TABLE 1

-1984-

PREVIOUSLY SOURCE TESTED UNITS

<u>Unit Description</u>	<u>Rating</u>	<u>Facility</u>	<u>Tag No.</u>	<u>Test Year</u>	<u>NO_x (ppm)</u>	<u>Test Results</u>	<u>Test Load</u>
GE-LM1500 Turbine	12.5 MHP	FS-1	1802	1979	36 ppm		11.9 MHP
GE-MS5001 R Turbine	25.0 MHP	CCP	1804	1979	66 ppm		21.5 MHP
GE Frame 5 w/ EGR Turbine	25.0 MW	CPS	Unit 6	1979	50 ppm		16.5 MW
GE-M5251 Turbine	25.0 MHP	CCP	1813	1982	69 ppm		26.2 MHP
GE-M3142 (J) Turbine	14.6 MHP	CPF-1	C2101C	1983	121 ppm		14.6 MHP
Ruston TB-5000 Turbine	4.9 MHP	CPF-1	P2202A	1983	67 ppm		4.4 MHP
Ruston TB-5000 Turbine	4.9 MHP	CPF-1	P2202B	1983	62 ppm		4.3 MHP
Black, Sivalls & Bryson Heater	10.0 MMBtu	DS-1Y	1Y01	1983	0.058 lb/MMBtu	50%	
Ruston TB-2500 Turbine	2.5 MHP	SIP	15302	1984	70 ppm		99%
Broach Heater	67.2 MMBtu	SIP	1402	1984	0.095 lb/MMBtu	140%	
CE Lummus Heater	120 MMBtu	STP	14402	1984	0.067 lb/MMBtu	94%	
GE-M5352 (B) Turbine	35.0 MHP	GC-2	Skid 460	1984	75 ppm		92%
Cleaver Brooks 200-800 Htr.	33.5 MMBtu	GC-2	Skid 481	1984	0.108 lb/MMBtu	62%	

TABLE 2

<u>Sea lift Year</u>	<u>Start- Up</u>	<u>Type/ Use</u>	<u>Qty</u>	<u>Location</u>	<u>Size(MHP)</u>	<u>Tests Qty/Yr</u>
1981	5/82	T/PWI	2	GC-2(West)	2.5(R/TA-2.5)	
1981	5/82	T/PWI	1	GC-2(West)	4.9(R/TB-5)	
1981	10/82	T/PWI	1	FS-2(East)	4.9(R/TB-5)	
1981	3/82	T/Gas	1	CCP(East)	25.0(GE 5)	1/1982
1981	9/82	T/LPS	2	FS-2(East)	35.0(GE 5)	
1981	1/84	T/PWI	1	FS-1(East)	4.9(R/TB-5)	
1981	2/83	T/PWI	1	FS-3(East)	4.9(R/TB-5)	Exempted
1982	1/83	T/IGL	1	GC-3(West)	4.9(R/TB-5)	
1982	2/83	T/PWI	1	FS-3(East)	4.9(R/TB-5)	
1982	1/83	T/PWI	2	FS-2(East)	4.9(R/TB-5)	
1982	1984	T/PWI	2	GC-3(West)	7.8(S/S3)	1/1985
1982	11/83	T/LPS	2	GC-2(West)	35.0(GE 5)	1/1984
1982	12/82	T/LPS	2	FS-3(East)	35.0(GE 5)	
1982		H/LPS	2	GC-2(West)	16.8 MMBtu/hr(Z)	1/1986
1982	6/83	H/LPS	3	GC-2(West)	33.5 MMBtu/hr(CB)	1/1984
1983	1984	T/WF	3	SIPW(West)	2.5(R/TA-2.5)	
1983	1984	T/WF	4	SIPB(East)	2.5(R/TA-2.5)	1/1984
1983	1984	T/PWI	2	GC-1(West)	7.8(S/S3)	
1983	<u>1984</u>	<u>T/PWI</u>	<u>2</u>	<u>GC-2(West)</u>	<u>7.8(S/S3)</u>	<u>1/1985</u>
1983	1984	T/WF	2	SIPW(West)	29.0(CR/RB211)	
1983	<u>1984</u>	<u>T/WF</u>	<u>3</u>	<u>SIPB(East)</u>	<u>29.0(CR/RB211)</u>	<u>1/1985</u>
1983	1984	T/LPS	2	GC-1(West)	35.0(GE-5)	
1983	1984	T/LPS	2	GC-3(West)	35.0(GE-5)	
1983	1984	T/LPS	2	FS-1(East)	35.0(GE-5)	
1983	1984	T/AL	1	FS-3(East)	35.0(GE-5)	
1983	1984	H/LPS	5	GC-3(West)	33.5 MMBtu/hr(CB)	
1983	<u>1984</u>	<u>H/PWX</u>	<u>1</u>	<u>GC-2(West)</u>	<u>38.0 MMBtu/hr(E)</u>	<u>1/1985</u>
1983	1984	H/WF	2	SIPB(East)	67.5 MMBtu/hr	1/1984
1983	<u>1984</u>	<u>H/WF</u>	<u>3</u>	<u>SIPB(East)</u>	<u>185.0 MMBtu/hr</u>	<u>1/1985</u>
1983	<u>1984</u>	<u>H/WF</u>	<u>2</u>	<u>SIPW(West)</u>	<u>320.0 MMBtu/hr(C)</u>	<u>1/1985</u>
1983	1984	H/WF	6	STP(East)	120 MMBtu/hr	1/1984
1985	1986	T/GLT	2	GC-1(West)	35.0(CR/RB)	1/1986
1985	<u>1986</u>	<u>T/PWI</u>	<u>2</u>	<u>FS-1(East)</u>	<u>4.9(R/TB-5)</u>	
1985	<u>1986</u>	<u>T/PWI</u>	<u>2</u>	<u>FS-2(East)</u>	<u>4.9(R/TB-5)</u>	
1985	1986	T/PWI	2	FS-3(East)	4.9(R/TB-5)	
1986	1987	T/EOR	3	CCP(East)	36.0	
1986	1987	T/EOR	4	CCP/EOR(East)	36.0	
1986	1987	H/EOR	3	CCP/EOR(East)	90 MMBtu/hr	1/1987
1987	1988	T	1	CPS(West)	24.0 MW	1/1988

T = Turbine

H = Heater

C = Coen

R = Ruston

CB = Cleaver-Brooks

S = Sulzer

CR = Cooper Rolls

Z = Zurn

GE = General Electric

AKLU ALASKA, INC.
PRUDHOE BAY CENTRAL LABORATORY
ANALYSIS REPORT

10 SEP 1984

SAMPLE# F24464 ARCHIVE# GABV64:24

LOCATION, COMPANY,
S.I.P. ARCO
SAMPLE MONTH, DAY, YEAR, HOUR, SAMPLE POINT DESCRIPTION
8 31 1984 1700 BRUACH HEATER #2

SAMPLE DESCRIPTION

FUEL GAS
TEMP., SAMPLE PS16, LINE PS16, METER#

149 45 ** **

REQUESTOR

*

PROPERTY	VALUE
SAMPLE TIME	1700	HOURS
TEMPERATURE	149	DEG.F
LINE PRESSURE	45	PSIG
NITROGEN	.35	MOL %
NEOMETHANE	.8548	MOL %
CARBON DIOXIDE	12.18	MOL %
ÐANE	6.39	MOL %
PROPANE	3.2	MOL %
ISO-BUTANE	.44	MOL %
N-BUTANE	1.07	MOL %
ISO-PENTANE	.22	MOL %
N-PENTANE	.28	MOL %
Oct	.39	MOL %
HYDROGEN SULFIDE	***	
GRASS DRY (IDEAL GAS)	1043.5	BTU/LB
NET (IDEAL GAS)	944.8	BTU/LB
GRASS SATURATED IDEAL	1025.3	BTU/LB
SP GRAVITY (CALC.)	.776
SP GRAVITY (MEAS.)	***	

COMMENTS:

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COMPLETED BY.....

REVIEWED BY.....

SIP SUPERVISOR
SIP FACILITY ENGINEER
LAB FILE

F.B.#1 SUPERINTENDENT
OPERATIONS ENGINEERING COORD.

ARCO ALASKA, INC.
PRUDHOE BAY CENTRAL LABORATORY
ANALYSIS REPORT

24 SEP 1983

FILE# E26581 ARCHIVE# G69K81:ZA

LOCATION, COMPANY,
KUFARUK ARCO
SAMPLE MONTH, DAY, YEAR, HOUR, SAMPLE POINT DESCRIPTION
9 20 1983 2000 FUEL GAS SCRUBBER

SAMPLE DESCRIPTION

FUEL GAS AT DRILLSITE 1-Y SAMPLED AT SCRUBBER

TEMP, SAMPLE PSIG, LINE PSIG, METER#
60 150 150 **

REQUESTOR

A. SCHUYLER

PROPERTY	VALUE	
NITROGEN	.22	MOL %
#METHANE	85.34	MOL %
CARBON DIOXIDE	.94	MOL %
ÐANE	7.19	MOL %
PROPANE	3.78	MOL %
ISO-BUTANE	.58	MOL %
N-BUTANE	1.23	MOL %
ISO-PENTANE	.27	MOL %
N-PENTANE	.28	MOL %
C6+	.16	MOL %
HYDROGEN SULFIDE	0	PPM PRESENT
GROSS DRY (IDEAL GAS)	1172.6	BTU/CF
NET (IDEAL GAS)	1061.5	BTU/CF
GROSS SATURATED IDEAL	1152.2	BTU/CF
SP GRAVITY (CALC.)	.676
SP GRAVITY (MEAS.)	.679

BTU VALUES ARE ON AN IDEAL BASIS AT 14.696 PSIA AND 60 DEG F

MENTS:

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COMPLETED BY.....

REVIEWED BY.....

D. SAMPERT/L. MATSON
K. KEYS/F. LOVE
S. KRUSE/D. KILAND
LAB/PROJECT/FILE